*****Suspended*****

Trend Study 3-8-96

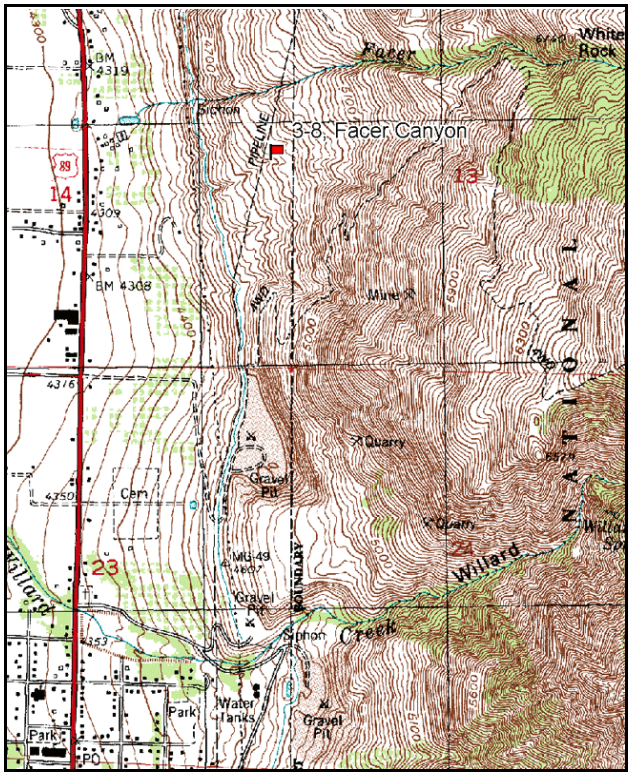
Study site name: Facer Canyon . Vegetation type: Big Sagebrush .

Compass bearing: frequency baseline 165 degrees magnetic.

Frequency belt placement: Line 1 (11 & 95ft), line 2 (34ft), line 3 (59ft), line 4 (71ft).

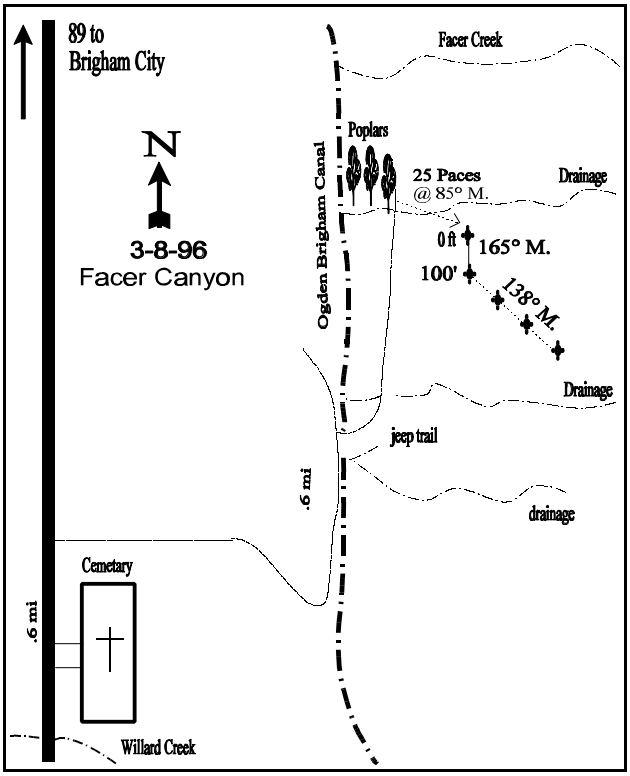
LOCATION DESCRIPTION

From Willard, proceed north on US 89 to Willard Creek and begin to note mileage. Proceed north 0.6 miles to a private road just south of marker 367 and turn right. Proceed to the Ogden/Brigham canal, turn left on west side of canal and proceed north 0.6 miles to a flood water bridge. Park here and walk across bridge, turn left (north) and follow trail approximately 0.25 miles crossing one wash and stopping at second wash. From the poplar trees on north side of wash, walk 25 paces at 85 degrees magnetic to the 0-foot baseline stake.



Map Name: Willard

Township 8N , Range 2W , Section 14



Diagrammatic Sketch

UTM 4587031 N 414218 E

DISCUSSION

Trend Study No. 3-8

*****SUSPENDED** - This site was suspended in 2001 and will be reevaluated in 2006. This site burned in 1995 and was not rehabilitated. It was sampled in 1996 following the burn. This site was evaluated by the Project Leader in 2001. It was suspended due to the loss of browse after the fire and no apparent wildlife use. Text and data tables are included from the 1996 report.

The Facer Canyon study site, located on the upper Lake Bonneville terrace, slopes moderately (15%) to the west at an elevation of 4,800 feet. Like much of the Brigham City-Willard face, this area was considered critical deer winter range in past years. Deer use, as estimated from pellet group frequency and browse utilization in 1984 and 1990, was mostly light since 1990. No deer or elk pellet groups were encountered in 1996. The dominant range type is a mixed population of basin and mountain big sagebrush with an herbaceous understory composed principally of annual forbs and grasses, a few perennial or biennial weeds, and a sparse cover of perennial grass.

Soil is "Wasatch Gravelly Sandy Loam," similar to that described in the write-up for study number 3-6. This is a deep, well drained soil with good potential for producing range forage. Although the upper horizons often become very dry in summertime, potential rooting depth is good enough to allow deeper rooted species uninterrupted access to available water (Chadwick et al. 1975). Soils at the site have a sandy clay loam texture with a neutral soil reaction (6.8 pH). The soil is extremely gravely with an effective rooting depth (see methods) estimated at almost 12 inches. Soil temperature is moderately high, averaging nearly 72° F at an average depth of over 15 inches. The site supports abundant vegetation and litter cover which adequately protects the soil from erosion.

Browse composition consisted of a dominant population of mixed basin and mountain big sagebrush and scattered plants of broom snakeweed and white rubber rabbitbrush in 1984 and 1990. The sagebrush was classified as all basin big sagebrush *(Artemisia tridentata tridentata*) in 1984. During the 1990 reading, the sagebrush was split and classified as both basin big sagebrush and mountain big sagebrush *(A. tridentata vaseyana)*. The big sagebrush varied in size from new seedlings, of which there were many, to mature plants in excess of four feet in height. A large number of established seedlings (i.e., 2-3 years old) in comparison to decadent plants, suggests that the population was at least maintaining itself if not actually increasing in density. However, given the size of mature plants it is difficult to see how the stand could become more dense. Utilization varied between individual shrubs from light to moderate and overall vigor was good.

The site burned during the summer of 1995 which eliminated all of the browse on the site. There was evidently no rehabilitation effort after the fire and there are no remnant sagebrush near or on site.

As of 1990, the herbaceous cover was relatively high, but composition was poor. The area was characterized by a dense growth of annual grasses and forbs as well as perennial and biennial weeds. Perennial grasses, represented mainly by bearded bluebunch wheatgrass and red three-awn, were common but were far outnumbered and outproduced by broad-leafed plants. Undesirable increaser and invader species such as ragweed, autumn willowweed, dyers woad and annual brome grasses comprised the bulk of the understory biomass. After the fire, annual grasses, annual forbs and weeds totally dominate the site. Japanese brome, cheatgrass and rattail fescue account for 98% of the grass cover, while storksbill, dyers woad, prickly lettuce and common sunflower provide 92% of the forb cover. Bluebunch wheatgrass is currently the only desirable perennial grass found on the site. However, it is uncommon and had a quadrat frequency of only 1% in 1996.

1984 APPARENT TREND ASSESSMENT

Soil trend appears stable but this entire area is subject to high flows in stream channels that originate higher up the mountain. High spring flows in these channels are extremely destructive and result in very deep and narrow gullies. Sheet erosion does not seem a serious problem at this time. However, large scale slippage and mud slides are a distinct possibility. From a vegetative standpoint, the dominant sagebrush population appears stable or even increasing. The herbaceous understory is comprised of a dense cover of annuals and other weeds which dry up very early in the season and provide abundant fuel capable of carrying a potentially destructive fire.

1990 TREND ASSESSMENT

The dense sagebrush stand on the sampled terrace has increased. Seedling and young shrubs make up 50% of the population. Sagebrush canopy cover is estimated at 28%. The abundant browse forage is virtually unutilized, with very little sign of big game. While bluebunch wheatgrass was more prevalent in 1990, the understory remains in a depleted condition dominated by weedy species.

TREND ASSESSMENT
soil - stable (3)
browse - upward (5)
herbaceous understory - downward, composition is mostly weeds and they are increasing, especially dyers woad; weedy understory could easily carry a destructive fire (1)

1996 TREND ASSESSMENT

A fire burned the site during the summer of 1995. All browse species were eliminated and the herbaceous understory is dominated by annual grasses, annual forbs and weeds. Soil trend is still stable even though percent bare ground increased and percent litter cover declined. The herbaceous vegetation cover and litter are abundant and well dispersed. Erosion is currently not a problem. The browse trend is down and totally absent. There are no signs of any browse in the immediate area. Due to the thick herbaceous understory dominated by annuals and weeds, shrub establishment will be difficult. The only effective way to reestablish sagebrush or other shrubs on the site would be to transplant them. Currently, with no browse species, this site is insignificant as big game winter range. Trend for the herbaceous understory is down. Abundance of grasses and forbs are up but the composition is extremely poor.

TREND ASSESSMENT
soil - stable (3)
browse - down and absent due to fire (1)
herbaceous understory - down and totally dominated by annuals and weeds (1)

HERBACEOUS TRENDS --
Herd unit 03 , Study no: 8

Type	Species	Nested Frequency			Quadrat Frequency			Average Cover %
		'84	'90	'96	'84	'90	'96	'96
G	Agropyron spicatum	$_{a}$-	$_{b}$12	$_{a}$3	-	6	1	.03
G	Bromus japonicus (a)	-	-	255	-	-	90	10.21
G	Bromus tectorum (a)	-	-	147	-	-	50	6.07
G	Festuca myuros (a)	-	-	53	-	-	22	.89
G	Poa bulbosa	$_{a}$-	$_{ab}$5	$_{b}$16	-	2	6	.30
Total for Annual Grasses		0	0	455	0	0	162	17.19
Total for Perennial Grasses		0	17	19	0	8	7	0.32
Total for Grasses		0	17	474	0	8	169	17.51
F	Achillea millefolium	1	3	-	1	1	-	-
F	Agoseris glauca	-	7	-	-	4	-	-
F	Alyssum alyssoides (a)	-	-	57	-	-	23	.44
F	Ambrosia psilostachya	42	49	27	15	19	14	.45
F	Collinsia parviflora (a)	-	-	10	-	-	5	.10
F	Epilobium brachycarpum (a)	-	-	7	-	-	4	.14
F	Erodium cicutarium (a)	-	-	264	-	-	86	16.23
F	Galium aparine (a)	-	-	22	-	-	10	.12
F	Helianthus annuus (a)	-	-	28	-	-	16	1.20
F	Holosteum umbellatum (a)	-	-	87	-	-	35	.35
F	Isatis tinctoria	$_{a}$13	$_{b}$134	$_{b}$124	7	62	54	6.86
F	Lactuca serriola	$_{a}$-	$_{a}$2	$_{b}$52	-	2	24	1.68
F	Lithospermum ruderale	-	1	-	-	1	-	-
F	Melilotus officinalis	-	-	2	-	-	1	.03
F	Microsteris gracilis (a)	3	-	5	1	-	3	.04
F	Polygonum douglasii (a)	-	-	3	-	-	3	.02
F	Rumex spp.	-	-	1	-	-	1	.15
F	Taraxacum officinale	1	-	-	1	-	-	-
F	Tragopogon dubius	$_{b}$34	$_{ab}$25	$_{a}$18	19	9	10	.40
F	Unknown forb-annual (a)	-	-	4	-	-	2	.01
F	Veronica biloba (a)	-	-	5	-	-	2	.03
Total for Annual Forbs		3	0	492	1	0	189	18.71
Total for Perennial Forbs		91	221	224	43	98	104	9.59
Total for Forbs		94	221	716	44	98	293	28.30

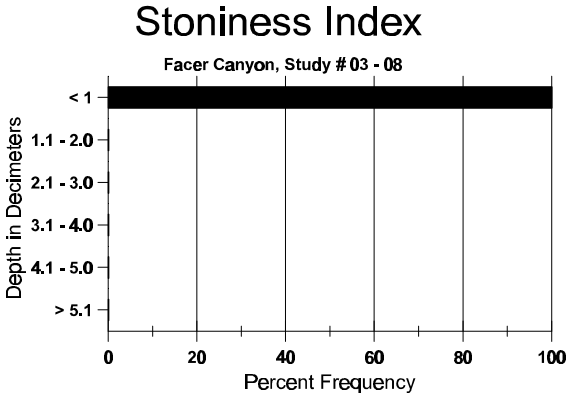
Values with different subscript letters are significantly different at alpha = 0.10 (annuals excluded)

BASIC COVER --
Herd unit 03 , Study no: 8

Cover Type	Nested Frequency '96	Average Cover % '84	'90	'96
Vegetation	353	1.00	5.25	49.09
Rock	122	.50	0	3.29
Pavement	251	3.25	6.25	7.67
Litter	384	95.00	85.75	24.46
Cryptogams	-	0	0	0
Bare Ground	211	.25	2.75	7.08

SOIL ANALYSIS DATA --
Herd Unit 03, Study no: 08, Facer Canyon

Effective rooting depth (in)	Temp °F (depth)	PH	%sand	%silt	%clay	%0M	PPM P	PPM K	dS/m
11.6	71.6 (15.6)	6.8	53.7	24.0	22.3	2.7	19.8	256.0	.5



PELLET GROUP FREQUENCY --
Herd unit 03 , Study no: 8

Type	Quadrat Frequency '96
Rabbit	3

BROWSE CHARACTERISTICS --
Herd unit 03 , Study no: 8

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Artemisia tridentata tridentata																		
S	84	92	-	-	-	-	-	-	-	-	92	-	-	-	6133			92
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	84	2	3	-	-	-	-	-	-	-	5	-	-	-	333			5
	90	23	-	-	7	-	-	-	-	-	27	-	3	-	2000			30
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
M	84	-	8	8	-	-	-	-	-	-	16	-	-	-	1066	48	55	16
	90	16	4	-	1	1	-	-	-	-	22	-	-	-	1466	39	29	22
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
D	84	1	2	8	-	-	-	-	-	-	9	-	2	-	733			11
	90	10	1	-	-	-	-	-	-	-	8	-	2	1	733			11
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'84	41%	50%	06%	+49%
'90	10%	00%	10%	
'96	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)					
	'84	2132	Dec:		34%
	'90	4199			17%
	'96	0			0%

Artemisia tridentata vaseyana																		
S	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	23	-	-	-	-	-	-	-	-	23	-	-	-	1533			23
	96	2	-	-	-	-	-	-	-	-	2	-	-	-	40			2
Y	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	10	-	-	-	-	-	1	-	-	11	-	-	-	733			11
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
M	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	90	26	-	-	-	-	-	-	-	-	26	-	-	-	1733	24	20	26
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
D	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	5	-	-	1	-	-	-	-	-	6	-	-	-	400			6
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
X	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	2040			102

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'84	00%	00%	00%	
'90	00%	00%	00%	
'96	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)					
	'84	0	Dec:		0%
	'90	2866			14%
	'96	0			0%

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Chrysothamnus nauseosus																		
Y	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	2	-	-	-	-	-	-	-	-	2	-	-	-	133			2
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
M	84	3	-	-	-	-	-	-	-	-	3	-	-	-	200	31	21	3
	90	1	-	-	-	-	-	-	-	-	1	-	-	-	66	37	26	1
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
D	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	3	-	-	1	-	-	-	-	-	3	-	1	-	266			4
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'84	00%	00%	00%	+57%
'90	00%	00%	14%	
'96	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
'84	200	Dec:		0%
'90	465			57%
'96	0			0%

Gutierrezia sarothrae																		
S	84	5	-	-	-	-	-	-	-	-	5	-	-	-	333			5
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	84	14	-	-	-	-	-	-	-	-	14	-	-	-	933			14
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
M	84	33	-	-	-	-	-	-	-	-	33	-	-	-	2200	16	14	33
	90	12	-	-	-	-	-	-	-	-	12	-	-	-	800	13	10	12
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
D	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	9	-	-	-	-	-	-	-	-	8	-	-	1	600			9
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'84	00%	00%	00%	-55%
'90	00%	00%	05%	
'96	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
'84	3133	Dec:		0%
'90	1400			43%
'96	0			0%